

THE MATH KIDS

THE TRIANGLE
SECRET



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The Triangle Secret



Book 6 in The Math Kids Series

by

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Chapter 1



Jordan Waters let out a contented sigh as he looked around his fifth-grade classroom. He felt like things were finally back to normal. The school year had started off very badly. Jordan and Justin Grant, his best friend since kindergarten, had been put into one class. The other half of the Math Kids, Stephanie Lewis and Catherine Duchesne, had been placed in Mrs. Wilson's class. To make matters even worse, Mr. Miller, his new teacher, had made it quite clear he was not a fan of anything to do with math.

Luckily, the Math Kids had been able to use their math skills to prove that Mr. Miller's son had been falsely accused of reckless driving. To return the favor, Mr. Miller had pulled a few strings and got Stephanie and Catherine moved into his class. The Math Kids were reunited, and things were right with the world. Mr. Miller had put them in the same math group, and now they had time to work together on difficult math problems. There was nothing

better than a tough math challenge as far as Jordan and his friends were concerned.

This time the problem came from Catherine's dad. He taught math at the college and had even written some of his own math books. Mr. Duchesne knew his daughter and her friends loved math and always had a new problem for them to solve. In fact, it was solving a math problem that first introduced them to the math professor. When Mr. Duchesne had been kidnapped, he wrote Catherine a secret message that she and her friends solved using the Fibonacci series, a famous math pattern. The Math Kids had figured out the clue and were able to rescue him. That was also when the four friends had met FBI Special Agent Carlson, who had been assigned to the kidnapping case. That introduction had led to the agent asking the Math Kids to assist the FBI on a cold case involving a bank robbery, and from there an unlikely friendship had developed between them.

"Okay, here's the problem," Catherine said as she read from a sheet of paper. "The new ice cream store has sixteen flavors of ice cream. How many ways can they make a three-scoop ice cream cone?"

"Does the order of the scoops matter?" Stephanie asked.

"That's a great question, Stephanie," Justin said. "That makes a big difference when you're counting up the total number of possible combinations."

The Triangle Secret

"It says the order of the scoops doesn't matter, just the flavors that end up in the cone," Catherine answered.

"So, two scoops of chocolate and one scoop of vanilla is the same no matter how you stack them up?" Stephanie asked.

"Well, obviously that's not right," Jordan chimed in. "You should always put the vanilla scoop in between the two chocolate scoops."

"Can we stick to the math and not your taste buds?" Justin asked.

Stephanie made her way to the white-board. She had the best handwriting, so she usually ended up being the one who wrote down the group's thoughts.

"We could do it the hard way," Jordan said. "We could write down all of the combinations and count them, but I have a feeling there's an easier method."

"I think you're probably right," Catherine said. "My dad is usually trying to teach some lesson when he gives us a problem like this. I think we should make a table and see if we can come up with a pattern."

Stephanie started a table on the white-board.

Flavors	Possibilities	Combinations
1	1	aaa

"I used letters for the flavors," she said. "The first one is pretty easy. Boring, but easy."

David Cole

"I don't know," Jordan said. "A three-scoop chocolate ice cream cone doesn't sound boring to me."

"We probably shouldn't do ice cream problems right before lunch," Justin said. The other Math Kids laughed.

"Okay, back to work," Stephanie said. With the help of her friends, she filled out the next few rows in the table.

Flavors	Possibilities	Combinations
1	1	aaa
2	4	aaa, aab, abb, bbb
3	10	aaa, aab, aac, abb, abc, acc, bbb, bbc, bcc, ccc
4	20	aaa, aab, aac, abb, abc, acc, bbb, bbc, bcc, ccc, aad, abd, acd, add, bbd, bcd, bdd, ccd, cdd, ddd

"Wow, the number of possibilities really goes up fast with each new flavor," Catherine said. "It will take us forever if we have to keep writing down all of the possible combinations. Does anyone see a pattern yet?"

The four friends stared at the board, hoping something would jump out at them. Stephanie jotted some numbers on a sheet of paper, then just as quickly scratched them out in frustration. Jordan spent his time trying to figure out the number of possible combinations for five flavors of ice cream, hoping the extra piece of information would allow him to figure out the pattern. Justin closed his eyes, trying to get into his "zone." When he got into the zone,

The Triangle Secret

he usually came out with an answer, but this time he came up blank.

Catherine looked at the sequence of possibilities. "1, 4, 10, 20. There's something familiar about that pattern, but I can't quite put my finger on it."

The lunch bell rang, interrupting their work. They put the problem out of their minds as they ate lunch. Instead, they discussed Catherine's upcoming art show.

"Are you entering one of your drawings?" Stephanie asked.

"No, I'm trying something a little different this time," she said.

Stephanie's eyes widened. In her opinion, Catherine was a great artist, but Stephanie had never seen her do anything but sketches. "What are you doing?" she asked. "Painting?"

"I thought about that. I have been reading a book about Wassily Kandinsky. He was a pioneer of abstract art."

"Abstract art, huh?" Justin interjected. "That's just shapes that don't make any sense. In my opinion, if I can do it, it's not art."

"I think you'd actually like Kandinsky," Catherine retorted.

"I doubt it."

"What if I told you his art was full of math?" Catherine asked.

"Well, that might make it a little more interesting."

"He used shapes—especially circles and squares—in most of his works. It is amazing to see how much expression he could get out of such simple shapes."

"How can you get expression out of a square?" Justin asked. His look said he wasn't buying it.

Stephanie ignored Justin. "So, you're doing an abstract painting?"

"No. I am using shapes though. But unlike Kandinsky, my entry is going to be three-dimensional. I'm going to..." Catherine grew quiet and smiled. "I just remembered where I saw that pattern," she said. "I'm pretty sure I know how to solve the problem now."

Before she could say anything more, Jordan's phone buzzed. He pulled it out of his pocket and stared wide-eyed at the screen while his friends looked on.

"Your art project is going to have to wait," he said tensely. "I just got a text from Agent Carlson. He's in trouble!"

